
Stem Cell and Regenerative Medicine Summer Internships for High School Students from Under-Served Communities

Grant Award Details

Stem Cell and Regenerative Medicine Summer Internships for High School Students from Under-Served Communities

Grant Type: SPARK

Grant Number: EDUC3-13127

Project Objective: This SPARK program provides 8-week summer research internships in regenerative medicine and stem cell for high school students at Children's Hospital Los Angeles. Students, recruited from under-served minority students from public high schools in the Los Angeles Metro area, will learn how basic research in stem cell biology can drive the discovery of new ways to detect and treat disease through mentored hands-on experimentation, workshops and outreach efforts. At the conclusion of their eight week internships, students will present their research in a culminating SPARK conference.

Investigator:

Name:	Mark Frey
Institution:	Children's Hospital of Los Angeles
Type:	PI

Award Value: \$508,750

Status: Pre-Active

Grant Application Details

Application Title: Stem Cell and Regenerative Medicine Summer Internships for High School Students from Under-Served Communities

Public Abstract:

This proposal is for a summer internship program that provides laboratory research experience in regenerative medicine and stem cell biology to high school students from populations that are traditionally under-represented in biomedical science careers. Rising seniors from under-served groups will be placed (8-12 students per year) in paid internships for the summer, conducting original research under the direction of established scientists and physician-scientists. Through mentored hands-on experimentation, the students will learn how basic research in stem cell biology can drive the discovery of new ways to detect and treat disease. In addition to the hands-on work in the labs, interns will learn to read and interpret the scientific literature, write a scientific abstract, and orally communicate their research at a formal symposium that caps the summer program. They will attend a daily didactic workshop in disease-focused stem cell concepts, and work with professional college counselors to build academic and professional skills to ensure that after their senior year they will matriculate to an undergraduate institution suited to preparing them for a career in science. Overall, this program is designed to increase the number of students from under-served backgrounds who pursue research careers, thus building a more diverse stem cell biology and regenerative medicine workforce of the future.

Statement of Benefit to California:

Our high school internship program was established with the goal of increasing diversity in the pipeline to biomedical science, and in particular stem cell biology careers. The program provides students from backgrounds that are under-represented in science and medicine with the opportunity to learn hands-on laboratory-based stem cell research and receive professional college preparation counseling. Through these efforts we aim to (1) encourage students to embark on the path to become scientists or physician-scientists with a focus on careers in regenerative medicine, (2) provide them with laboratory research experience that will both grow their interest in science and make them competitive for student research opportunities in college, and (3) assist them in gaining admission to outstanding colleges and universities that will prepare them for advanced study and potential careers in stem cell biology and regenerative medicine. Benefits to California include:

1. Increasing interest in regenerative medicine careers among students from backgrounds that are chronically under-represented in stem cell research.

California is the most diverse state in the USA, with for example ~39% of the populace identifying as Latinx/Hispanic and another ~6% identifying as Black/African-American. This diversity of California's population is not, however, reflected in the scientific workforce. Empowering Latinx/Hispanic, Black/African-American, and other minority students in California to see themselves as future scientists (and giving them the tools to begin pursuing this goal) thus represents benefit for the state both in terms of expanding the available scientific workforce and in working towards removing structural barriers that prevent equitable opportunity for these students.

2. Developing and training a cohort of scientific mentors who are ready to promote diversity, equity, and inclusion in the scientific community in California.

A challenge for efforts to remove barriers to participation in scientific fields is overcoming the inertia of the status quo/established culture of the scientific community. By engaging successful stem cell researchers in the process of mentoring would-be scientists from under-served communities, we hope to normalize the idea that removing these barriers and reaching out to these students is an important part of a practicing scientist's mission and citizenship.

3. Strengthening connections and understanding between California stem cell researchers and the community at large.

The last few years have seen an erosion in public trust in scientific expertise in the USA, with disastrous public health consequences. Better communication and connection between the academy and the community is essential to reverse this trend. This goal will be served by generating cohorts of students who have seen stem cell research "from the inside."

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